

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of using an electrocardiogram signal to assess a patient's cardiac vulnerability to sudden cardiac death by; the method comprising:

~~— assessing a patient's cardiac vulnerability to sudden cardiac death by:~~

determining a first value representative of a 3-D QRST angle for a first beat of the electrocardiogram signal;

determining a second value representative of a 3-D QRST angle for a second beat of the electrocardiogram signal, wherein determining the first and second values defines a relationship between depolarization and repolarization;

calculating a variation between the first value and the second value; and

outputting said calculated variation to an output device.

2. (Cancelled)

3. (Previously Presented) A method as set forth in claim 1 and further comprising calculating the 3-D QRS-T angle from a set of orthogonized X, Y, and Z leads of the electrocardiogram signal.

4. (Original) A method as set forth in claim 1 and further comprising defining the relationship between depolarization and repolarization to include a QRS duration and a T duration.
5. (Original) A method as set forth in claim 1 and further comprising defining the relationship between depolarization and repolarization to include a QRS duration and a QT duration.
6. (Original) A method as set forth in claim 1 and further comprising selecting the first beat and the second beat from median beats.
7. (Original) A method as set forth in claim 1 and further comprising selecting the first beat and the second beat from mean beats.
8. (Original) A method as set forth in claim 1 and further comprising:

selecting the first beat from an electrocardiogram signal having a heart rate within a first range; and

selecting the second beat from an electrocardiogram signal having a heart rate within a second range that is different from the first range.
9. (Original) A method as set forth in claim 1 and further comprising conducting a time series analysis of the first value and the second value.

10. (Original) A method as set forth in claim 1 and further comprising using a cardiac parameter in addition to the electrocardiogram signal to assess the patient's cardiac vulnerability to sudden cardiac death.

11. (Original) A method as set forth in claim 1 and further comprising using heart rate variability in addition to the electrocardiogram signal to assess the patient's cardiac vulnerability to sudden cardiac death.

12. (Original) A method as set forth in claim 1 and further comprising using heart rate turbulence in addition to the electrocardiogram signal to assess the patient's cardiac vulnerability to sudden cardiac death.

13. (Original) A method as set forth in claim 12 and further comprising using data corresponding to blood pressure change in addition to heart rate turbulence to assess the patient's cardiac vulnerability to sudden cardiac death.

14. (Original) A method as set forth in claim 12 and further comprising calculating heart rate turbulence using a heart rate change prior to a premature ventricular contraction and a heart rate change after the premature ventricular contraction.

15. (Original) A method as set forth in claim 12 and further comprising calculating heart rate turbulence using premature ventricular contractions, the premature ventricular contractions having varying cycle lengths.

16. (Original) A method as set forth in claim 12 and further comprising calculating heart rate turbulence using premature ventricular contractions, the premature ventricular contractions having varying morphologies.

17. (Original) A method as set forth in claim 12 and further comprising:

selecting the first beat from an electrocardiogram signal obtained from the patient prior to an event; and

selecting the second beat from an electrocardiogram signal obtained from the patient at least one of during and after the event;

wherein the event includes at least one of administering a pharmaceutical drug to a patient, pacing the patient using exercise, and pacing the patient using an implanted pacemaker.

18. (Previously Presented) A method of assessing a patient's cardiac vulnerability to sudden cardiac death using an electrocardiogram signal, the method comprising:

assessing the patient's cardiac vulnerability to sudden cardiac death by:

determining a first value representative of a QRS-T angle for a first beat of the electrocardiogram signal;

determining a second value representative of a QRS-T angle for a second beat of the electrocardiogram signal;

analyzing variation of the first value and the second value using a time series analysis, wherein the QRS-T angles are 3-D QRS-T angles; and

outputting said analyzed variation to an output device.

Application No. 10/824,950
Amendment Dated August 10, 2007
Reply to Final Office Action of May 21, 2007

19. (Original) A method as set forth in claim 18 and further comprising using data corresponding to a cardiac parameter in addition to the electrocardiogram signal to assess the patient's cardiac vulnerability to sudden cardiac death.

20. (Cancelled)